Installation Instructions

for use by heating contractor

Vitocell 100
CVA-Series
Enameled indirect-fired domestic hot water storage tank
42 USG to 120 USG (160 L to 450 L) capacity

VITOCELL® 100-V

CAUTION

The heat transfer medium must be water or other non-toxic fluid having a toxicity rating or class of 1, as listed in clinical toxicology of commercial products, 5th edition.

This tank version is not suitable for steam heating applications.

The pressure of the heat transfer medium must be limited to a max. of 30 psig by an approved safety or relief valve.

Product may not be exactly as shown

IMPORTANT

Read and save these instructions for future reference.

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Please file in Service Binder

Safety, Installation and Warranty Requirements

Please ensure that these instructions are read and understood before commencing installation. Failure to comply with the instructions listed below and details printed in this manual can cause product/property damage, severe personal injury, and/or loss of life. Ensure all requirements below are understood and fulfilled (including detailed information found in manual subsections).

■ **Licensed professional heating contractor**
The installation, adjustment, service and maintenance of this equipment must be performed by a licensed professional heating contractor.

▶*Please see section entitled "Important Regulatory and Installation Requirements".*

■ **Product documentation**
Read all applicable documentation before commencing installation. Store documentation near product in a readily accessible location for reference in the future by service personnel.

▶*For a listing of applicable literature, please see section entitled "Important Regulatory and Installation Requirements".*

■ **Advice to owner**
Once the installation work is complete, the heating contractor must familiarize the system operator/ ultimate owner with all equipment, as well as safety precautions/requirements, shutdown procedure, and the need for professional service annually before the heating season begins.

■ **Warranty**
Information contained in this and related product documentation must be read and followed. Failure to do so renders the warranty null and void.

In solar applications:

CAUTION

The heat transfer medium must be either potable water or contain only substances which are recognized as safe by the U.S. Food and Drug Administration.

The Pressure of the heat transfer medium must be maintained less than the normal minimum operating pressure of the potable water system

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Important Regulatory and Installation Requirements

Codes

The installation of indirect-fired hot water storage tanks in boilers and solar system application might be governed by individual local rules and regulations for this type of product, which must be observed. Always use latest editions of codes.

In the Commonwealth of Massachusetts, all plumbing work must be done by a licensed plumber or gas-fitter and for gas installations, all gas piping must be done by a licensed gas-fitter.

Mechanical room

Ensure the mechanical room complies with the requirements of the system design guideline and/or Technical Data Manual (available from your Viessmann sales representative).
The tank must be installed in a mechanical room which is never subject to freezing temperatures.
Ensure water in tank is drained if not in use and danger of freezing exists in the mechanical room.

▶Please carefully read this manual prior to attempting installation. Any warranty is null and void if these instructions are not followed.

This product must be installed observing not only the information and instruction provided in the pertinent product literature (see list on following page), but also all local, provincial/state plumbing and building codes, as they apply to this product and all periphery equipment.

For information regarding other Viessmann System Technology componentry, please reference documentation of the respective product (available from your Viessmann sales representative).

We offer frequent installation and service seminars to familiarize our partners with out products. Please inquire.

⚠ WARNING

If the heating system itself is to be filled with Glycol or any other antifreeze, the system fill must be of non-toxic or food grade antifreeze. In any circumstance, a non-toxic fluid must be used. Ensure a copy of the Material Safety Data Sheet (MSDS) is supplied to the operator/ultimate owner of the system. The use of Viessmann supplied "Tyfocor-HTL" solar fill is recommended for the solar heating circuit.

Working on the equipment

The installation, adjustment, service, and maintenance of this equipment must be done by a licensed professional heating contractor who is qualified and experienced in the installation, service, and maintenance of hot water heating systems. There are no user serviceable parts on this equipment.

Ensure main power supply to equipment, the heating system, and all external controls has been deactivated. Close main oil or gas supply valve. Take precautions to avoid accidental activation of power during service work.

▶The completeness and functionality of field supplied electrical controls and components must be verified by the heating contractor. These include low-water cut-offs, flow switches (if used), staging controls, pumps, motorized valves, air vents, thermostats, temperature controls, etc.

Technical literature

Literature applicable to all aspects of the Vitocell:

- Technical Data Manual
- Installation Instructions
- Start-up/Service Instructions
- Operating Instructions and User's Information Manual

▶Leave all literature at the installation site and advise the system operator/ultimate owner where the literature can be found. Contact Viessmann for additional copies.

About These Instructions

Take note of all symbols and notations intended to draw attention to potential hazards or important product information. These include “WARNING”, “CAUTION”, and “IMPORTANT”. See below.

WARNING

Indicates an imminently hazardous situation which, if not avoided, could result in substantial product/property damage, serious injury or loss of life.

▶Warnings draw your attention to the presence of potential hazards or important product information.

CAUTION

Indicates an imminently hazardous situation which, if not avoided, may result in minor injury or product/property damage.

▶Cautions draw your attention to the presence of potential hazards or important product information.

IMPORTANT

▶Helpful hints for installation, operation or maintenance which pertain to the product.

▶

▶This symbol indicates that additional, pertinent information is to be found.

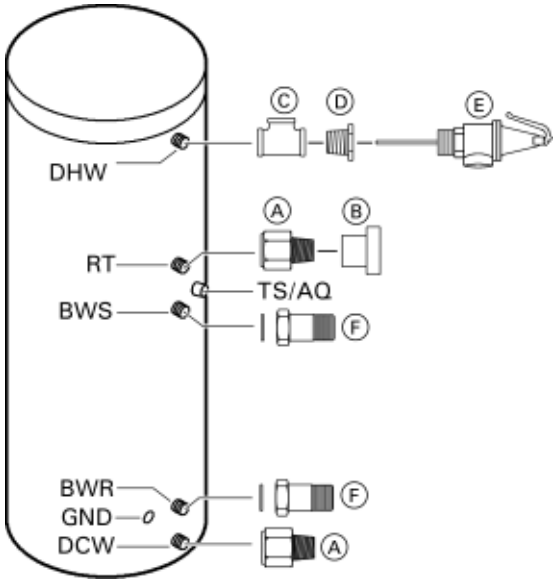
▶This symbol indicates that other instructions must be referenced.

Product Information

42 USG to 120 USG (160 L to 450 L) capacity

Enameled indirect-fired domestic hot water storage tank with one heat exchanger coil for use with hot water heating boilers, residential/commercial heating plants, and low-temperature heating systems.
These tank versions are not suitable for steam heating applications.

Tank Connections



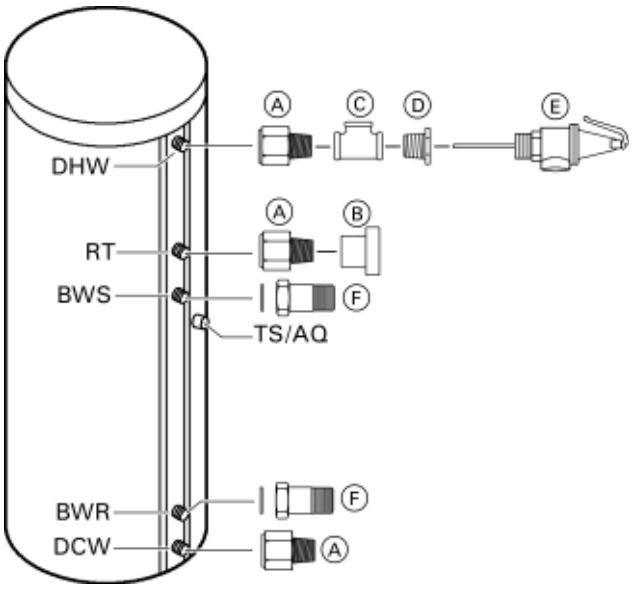
DHW tank connections 42 to 79 USG (160 to 300 L)

Supplied adaptor sizes		Vitocell 100-V	
Part	**Size**	**42/53 USG (160/200 L)**	**79 USG (300 L)**
Ⓑ Brass cap	¾ in.	1	--
Ⓐ Brass adaptor	¾ in.	2	--
Ⓒ Brass tee	¾ in.	1	--
Ⓕ Brass adaptor	1 in. + gasket	2	2
Ⓑ Brass cap	1 in.	--	1
Ⓐ Brass adaptor	1 in.	--	2
Ⓒ Brass tee	1 in.	--	1
Ⓔ Temperature and pressure relief valve	¾ in.	1	1

Legend

DHW	Domestic hot water supply
RT	Recirculation tapping
TS/AQ	DHW temperature sensor or aquastat of boiler control (upper indirect coil)
BWS	Boiler water supply *1
BWR	Boiler water return *1
DCW	Domestic cold water supply
GND	Grounding connection (casing) 42 to 79 USG (160 to 300 L) only

*1 The upper indirect coil is provided for connection to a boiler or a heat pump.



DHW tank connections 120 USG (450 L)

Supplied adaptor sizes		Vitocell 100-V
Part	**Size**	**120 USG (450 L)**
Ⓑ Brass cap	1 in.	1
Ⓐ Brass adaptor	1 in.	1
Ⓐ Brass adaptor	1¼ in.	2
Ⓒ Brass tee	1¼ in.	1
Ⓓ Reducer hex bushing	1¼ in. x ¾ in.	1
Ⓔ Temperature and pressure relief valve	¾ in.	1
Ⓕ Brass adaptor	1 in. + gasket	2

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Tank Set-up

- For narrow passageways, remove upper and lower portion of crating and carry DHW tank to its installation location by means of crating boards mounted on the tank.
- Position tank carefully and remove wood crating.
- Locate tank(s) on flooring or foundation capable of supporting the weight of the tank(s) filled with water.
- The tank does not require a special foundation and can be placed directly on the floor. If, for cleanliness purposes, the tank is to be kept off the floor, a foundation for each tank or tanks can be used.

CAUTION

Install the DHW tank in a frost-protected and draft-free room. Otherwise it must be drained when not in use, in order to reduce the risk of damages caused by freezing.

IMPORTANT

Provide sufficient clearances towards the wall to allow the aquastat to be operated (if installed).

Recommended installation clearances for service access

Rear		in. (mm)	18 (460)
Sides	May be reduced if rear pipe connections can be reached with less clearance	in. (mm)	12 (300)
Top		in. (mm)	36 (900)
Front		in. (mm)	24 (600)

Minimum clearances to combustibles

All sides	in. (mm)	0 (0)
Floor		combustible

1. Apply Loctite 55 as per supplied instructions to each tank nipple. Use Loctite 55 provided in the installation fittings package.
2. Connect female ends of brass adaptors to the tank nipples.

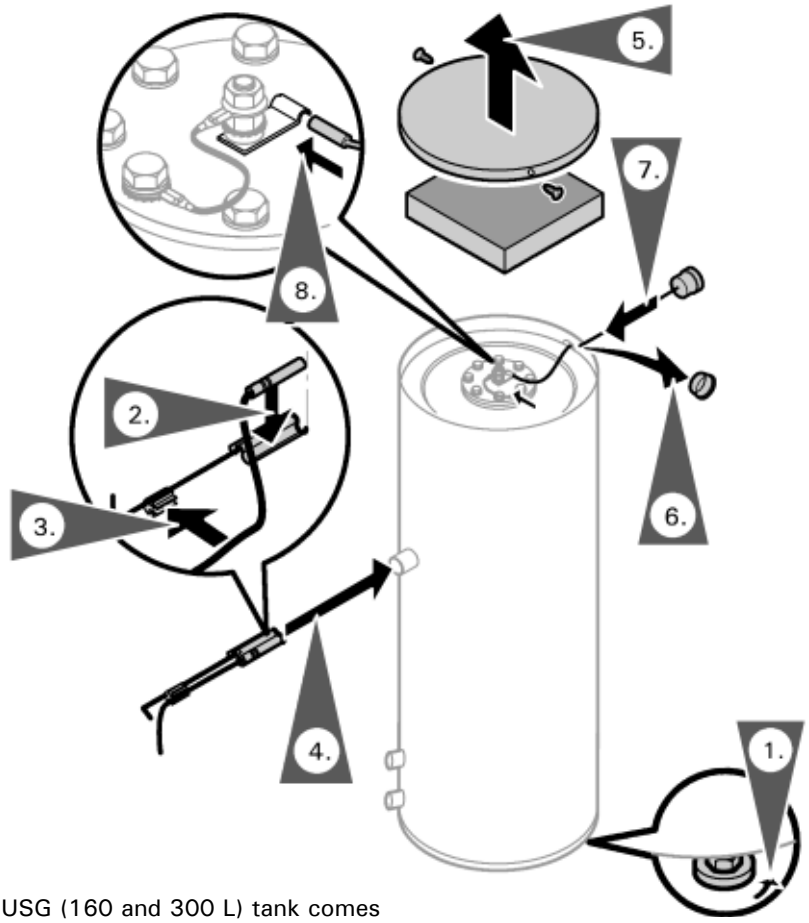
CAUTION

Do not overtighten the adaptors as this may damage the Ceraprotect emamel of the tank.

42 to 79 USG (160 to 300 Liter) Tank Installation

Thermal insulation and thermometer installation

All required components are included in the insulation jacket carton.



Note: the 42 to 79 USG (160 and 300 L) tank comes with the insulation jacket installed.

1. Position and level the DHW tank with its leveling bolts.

IMPORTANT

Do not extend the leveling bolts beyond an overall length of 1½ in. (35 mm).

2. Mount sensor on the outside of the sensor spring-clip (not in the center groove) so that it is flush with the front of the sensor spring-clip.
3. Snap sensor cabling into plastic clip of sensor mounting equipment.

IMPORTANT

Never wrap insulating tape around the sensor.

4. Completely insert sensor mounting hardware along with sensor into sensor well.
5. Remove top cover and insulation blanket.
6. Remove cap from thermometer opening.
7. Slide thermometer sensor cable through thermometer opening in the panel and insert thermometer.
8. Completely insert sensor into metal clip on flange (check anode connection on page 8). Install the insulation blanket and top cover.

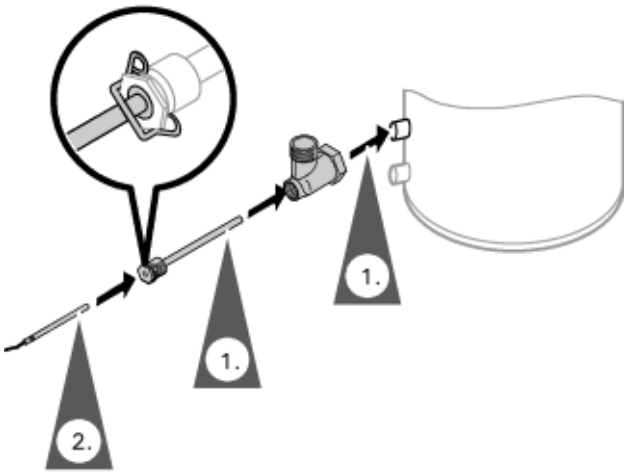
Note: For applications with Vitotronic 100 control, use supplied plastic clip and two screws to secure Honeywell bulb capillary. For applications with the Vitotronic 200 or 300 control option, use supplied plastic clip and two screws to secure sensor cable to the tank sheet metal.

Note: For Solar Domestic Hot Water with Vitosolic 200, SCU 124 or SCU 224, use supplied plastic clip and two screws to secure sensor cable to the tank sheet metal.

42 to 79 USG (160 to 300 Liter) Tank Installation *(continued)*

Temperature sensor installation for solar operation using 42 to 79 USG (160 to 300 L) tanks

The temperature sensor for solar operation is included in the solar control unit package.
The brass elbow with sensor well is available as an option and must be used when solar connection is required.



1. For solar operation, install the sensor well into the brass elbow and connect the assembly to the solar return line.
2. Insert the temperature sensor until it bottoms out inside the sensor well.

IMPORTANT

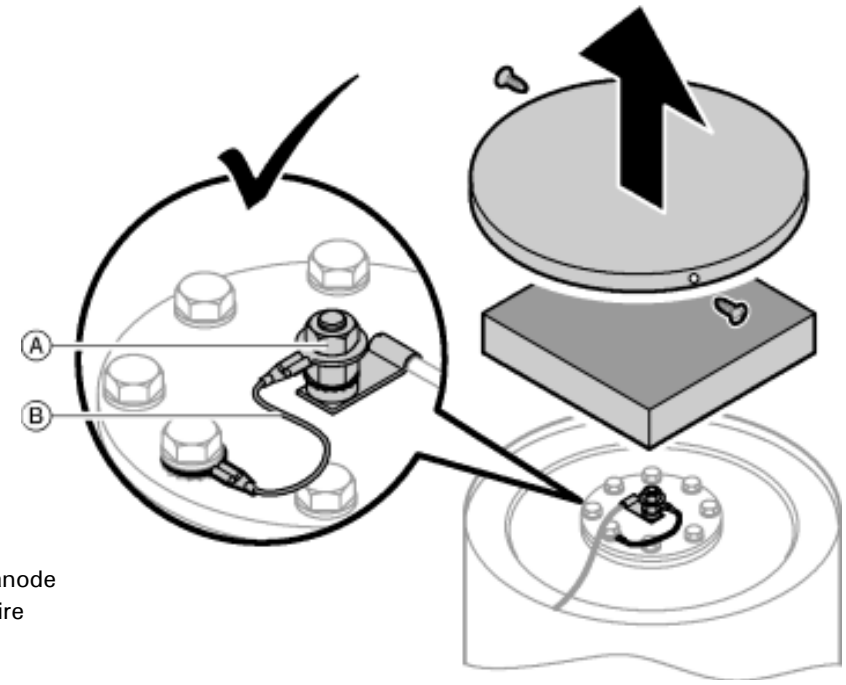
Never wrap insulating tape around the sensor. Do not install solar tank sensor anywhere other than the brass elbow with sensor well.

Checking anode connections

Ensure the grounding wire is properly secured to the magnesium anode.

IMPORTANT

When connecting an externally powered anode to the top flange lid, separate the magnesium anode in the bottom flange lid from the grounding cable. The magnesium anode may remain installed.

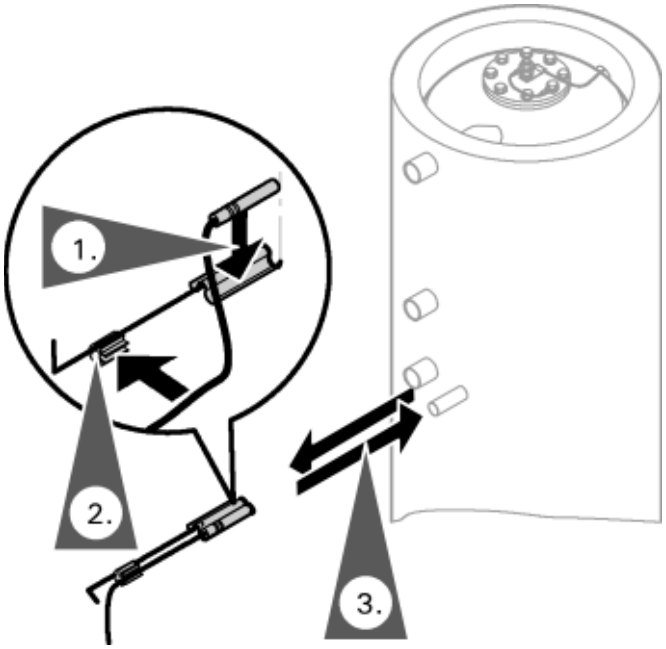


Legend

Ⓐ Magnesium anode
Ⓑ Grounding wire

120 USG (450 Liter) Tank Installation

Temperature sensor installation (when using a Vitotronic 200 / 300 or Vitodens 200)



1. Mount sensor on the outside of the sensor spring-clip (not in the center groove) so that it is flush with the front of the sensor spring-clip.
2. Snap sensor cabling into plastic clip of sensor mounting equipment.

CAUTION

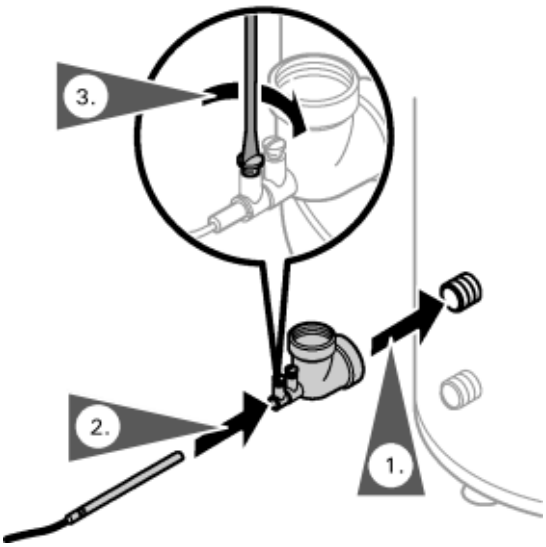
Never wrap sensor with any type of tape or insulation.

3. Completely insert sensor mounting equipment along with sensor into sensor well.
4. For applications with Vitotronic 100 control, use supplied plastic clip and two screws to secure Honeywell bulb capillary. For applications with the Vitotronic 200 or 300 control option, use supplied plastic clip and two screws to secure sensor cable ⑤ to the tank sheet metal.

Note: When using a Vitotronic 100 boiler control, refer to page 14 for aquastat installation.

Temperature sensor installation for solar operation using 120 USG (450 L) tank

The temperature sensor for solar operation is included in the solar control unit package.
The brass elbow with sensor well is available as an option and must be used when solar connection is required.



1. For solar operation, install the sensor well/brass elbow and connect the assembly to the solar return line.
2. Insert the temperature sensor until it bottoms out inside the sensor well.

IMPORTANT

Never wrap insulating tape around the sensor. Do not install solar tank sensor anywhere other than the brass elbow with sensor well.

3. Tighten screws to secure sensor (do not over tighten).

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120 USG (450 Liter) Tank Installation *(continued)*

Levelling and bottom thermal insulation

All necessary parts for enclosure assembly are packaged in a separate carton.

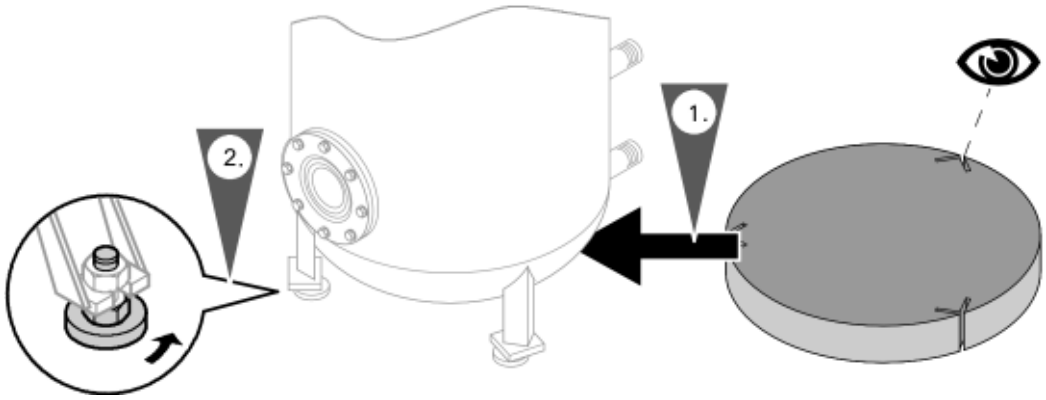
⚠ CAUTION

The thermal insulation must not come in contact with open flames. Exercise extreme caution when welding and soldering.

1. Fit the thermal insulation blanket below the tank prior to the installation of the tank itself.
2. Position and level the DHW tank with its leveling bolts.

IMPORTANT

Do not extend the leveling bolts beyond an overall length of 1½ in. (35 mm).

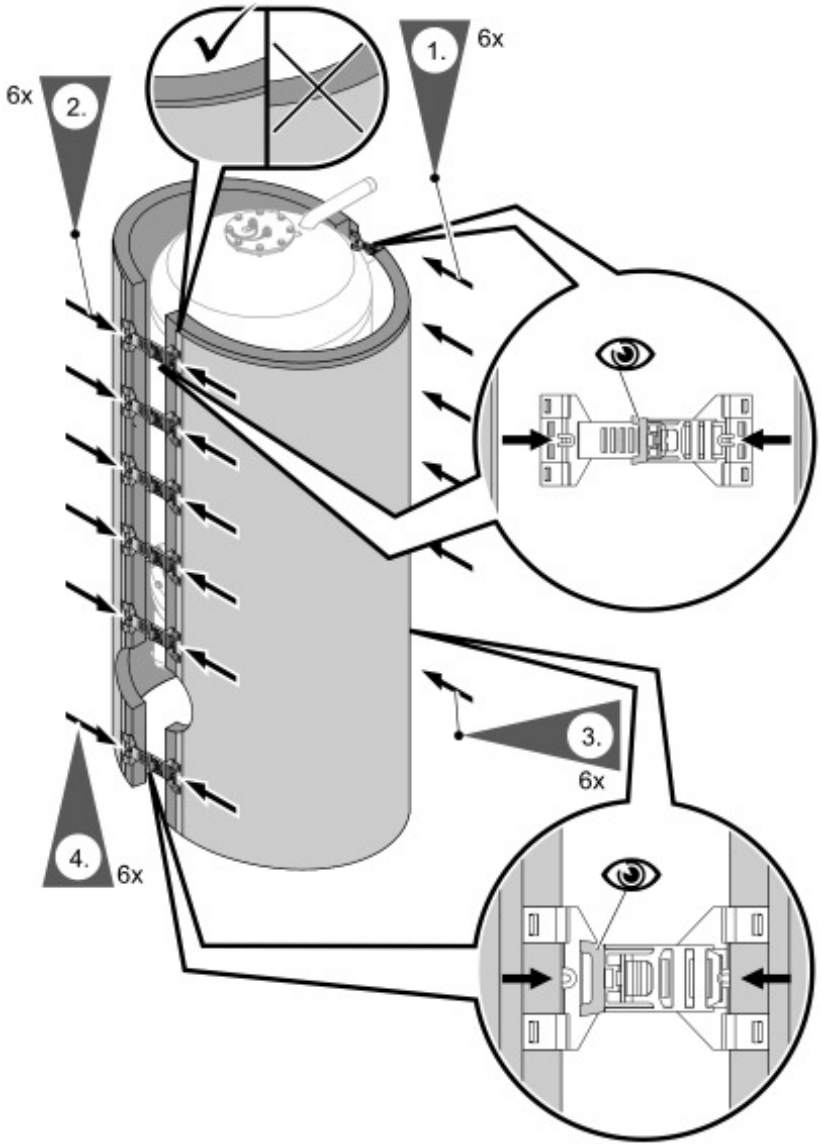


120 USG (450 Liter) Tank Installation *(continued)*

Fitting the thermal insulation jacket

Note: - insulation remnants must not enter the tank through the tank connections.
- 2 people are recommended to complete this work.

1. Fit both halves of the insulation jacket close to the tank. Orient the jacket so the profile cutouts match the tank fittings.
2. At the rear of the tank, install all 6 clip closures evenly to both halves of the insulation jacket.
3. At the front of the tank, install all 6 clip closures evenly to both halves of the insulation jacket.
4. At the rear of the tank, tighten all 6 clip closures until both halves of the insulation jacket meet.
5. At the front of the tank, tighten all 6 clip closures until both halves of the insulation jacket meet.

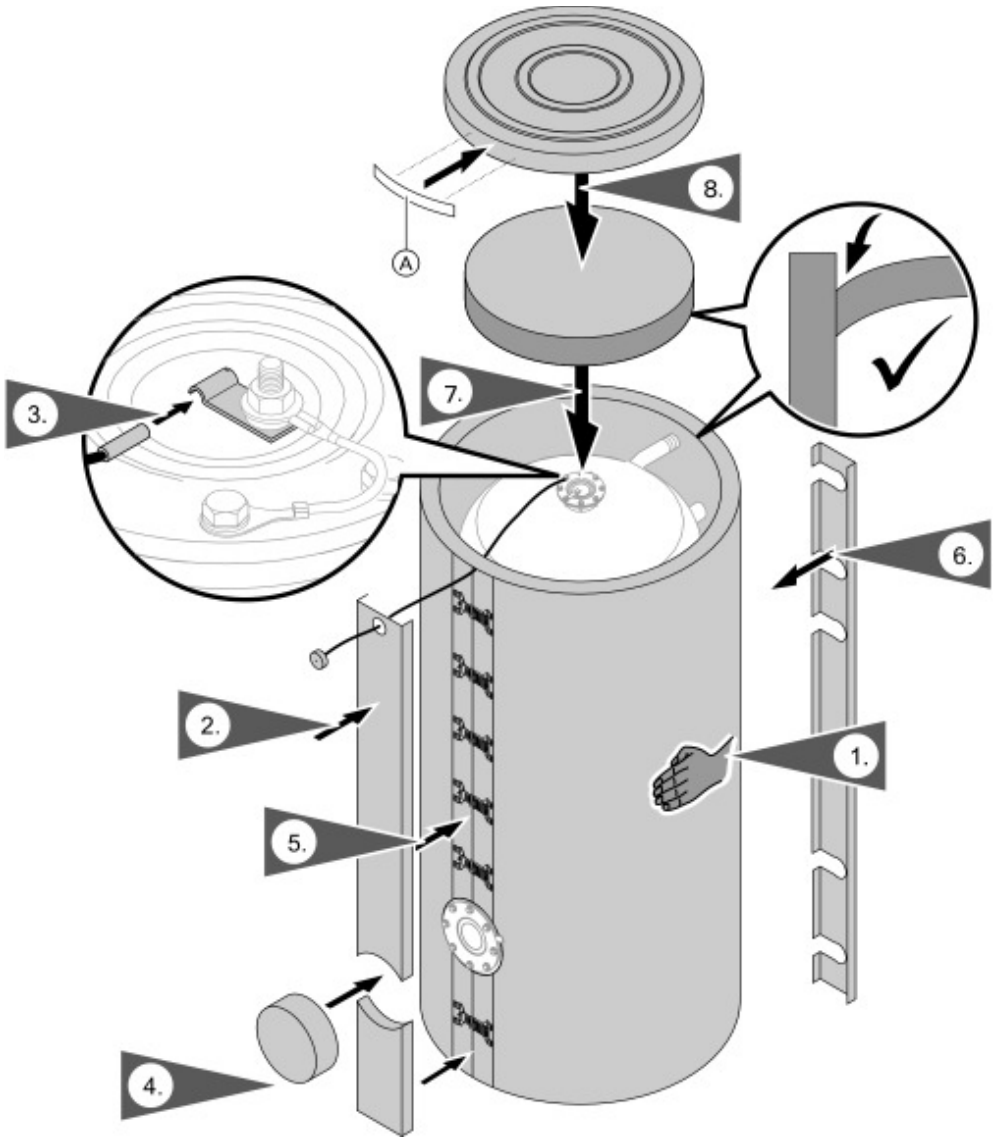


120 USG (450 Liter) Tank Installation *(continued)*

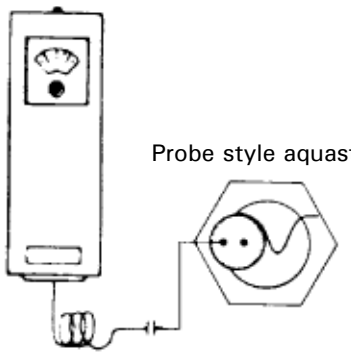
Fitting the thermometer and thermometer sensor (if supplied) and covers

1. Smooth out the insulation jacket by tapping the jacket evenly against the tank.
2. Route thermometer capillary tube through the front cover hole and insulation jacket, then snap the thermometer in place.
3. Insert the thermometer probe under the clip.
4. Install the front cleanout cover and the front lower seam cover.
5. Install the upper front seam cover.
6. Install the back seam cover.
7. Install the top insulation and press down the edges as shown.
8. Install the top lid and press the logo Ⓐ into the lid.

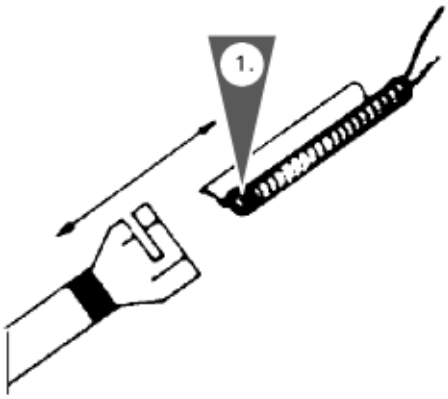
Note: Seal the hole in the seam cover below the thermometer with a cover.

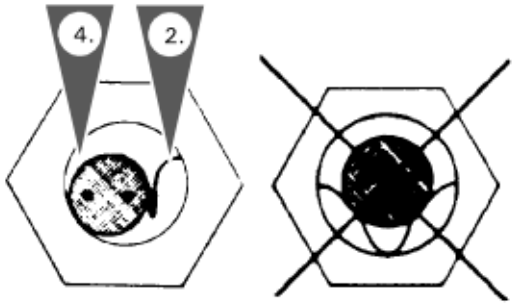


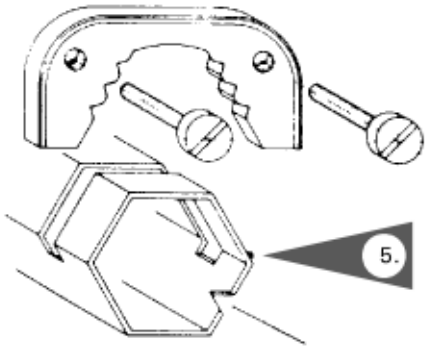
Aquastat Installation (when using a Vitotronic 100)



Probe style aquastat







Where a Vitotronic 100 and a Viessmann Power/Pump Control Module (accessory) are utilized to control DHW production, follow these aquastat mounting instructions:

1. Insert the extended capillary of the aquastat (supplied with Viessmann Power/Pump Control Module, not illustrated) fully and completely into sensor well. Mount aquastat inconspicuously on tank paneling.
   Follow instructions below with regard to sensor and spring clip installation.
   ... if aquastat is to be mounted remote from the tank well,
2. Align sensor bulb with spring clip.
3. Slide assembly into well.
4. The retention spring clip must press the bulb properly to ensure surface contact with the well.
   ... if aquastat is to be mounted directly on the tank well,
5. Mount aquastat with holding clip supplied directly onto well. Bend capillary tube into groove opening to allow for mounting of aquastat.

WARNING

To ensure optimum, safe operation, the supplied stainless steel well must be installed. The well diameter is large enough to accommodate a wide variety of sensing bulbs.

Always use spring clip to ensure proper contact of capillary bulb against the stainless steel well for proper sensing/heat transfer!

Grounding connection

Connect the grounding in accordance with the requirements stipulated by your local electricity supply company and current local regulations.

WARNING

The operating aquastat and any secondary high limit aquastat of the tank must be set such that the DHW temperature inside the tank never exceeds 203° F (95° C).

WARNING

Domestic hot water temperatures over 125° F (52° C) can cause severe burns instantly or death from scalds. Children, disabled and elderly are at highest risk of being scalded.

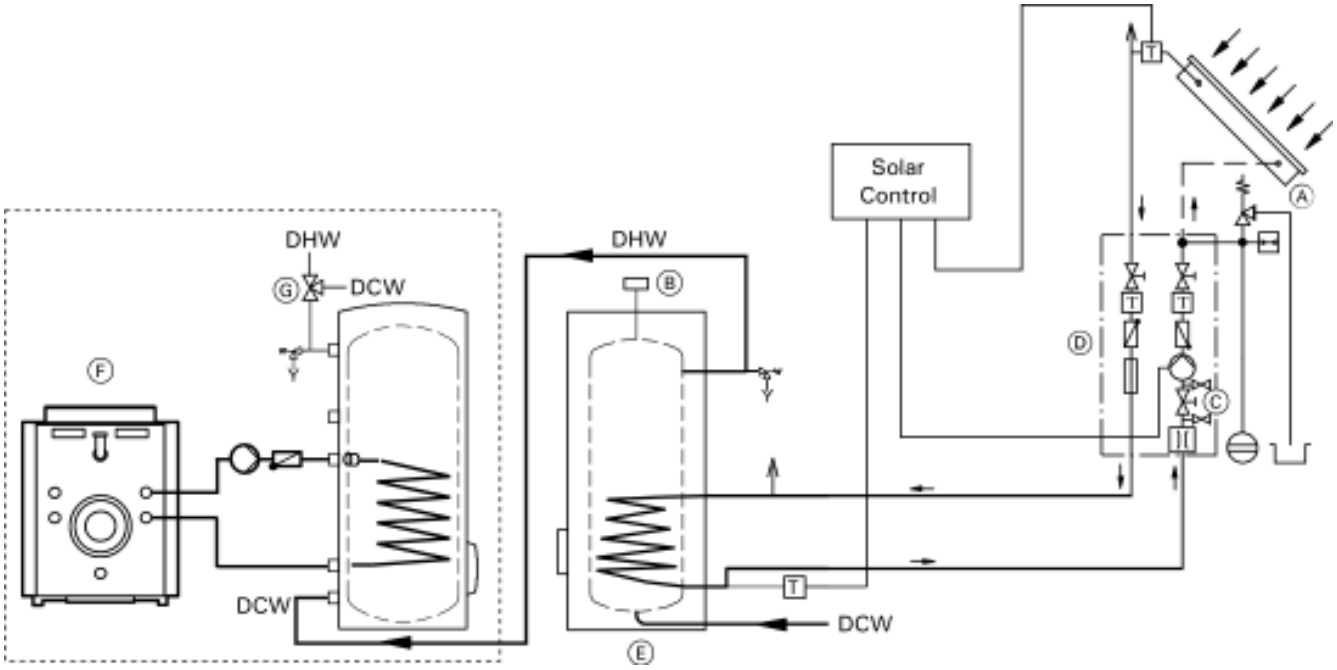
Feel water before bathing or showering. Temperature limiting valves are available and must be used where domestic hot water storage tank temperatures exceed 140° F (60° C).

IMPORTANT

Use a Loctite 55 string and pipe dope on all threaded nipples on tank.

Boiler Water Connections (heat exchanger connection)

Recommended piping for solar application with an additional tank



Legend

Ⓐ Solar collector
Ⓑ High limit safety cut-out
Ⓒ Filling valve
Ⓓ Solar-Divicon
Ⓔ Vitocell 100-V
Ⓕ Individual DHW tank heating system
Ⓖ Anti-scald tempering valve

⚠ WARNING

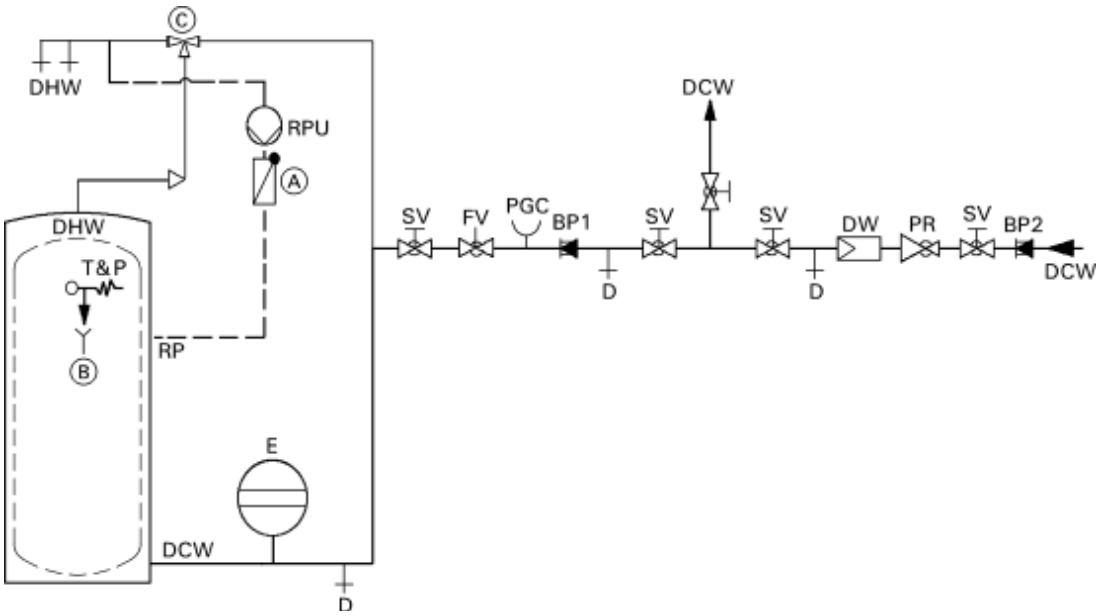
Due to the potentially high DHW temperatures generated by the solar heating system, the domestic hot water temperature must be limited to a maximum of 140° F (60° C) by installing a anti-scald tempering valve. The tempering valve does not completely eliminate the risk of scalding at the tap. The installation of a mixing tap is recommended.

IMPORTANT

Use a Loctite 55 string and pipe dope on all threaded nipples on tank.

1. For boiler water supply temperatures over 203° F (95° C):
   Remove plastic supply and return grommets (grommets are left-threaded).
2. Pipe supply line with an incline and install an air vent valve at the highest point.
3. For boiler water supply temperatures over 230° F (110° C):
   Install a type-tested high limit safety cut-out, if no other has previously been installed in this system. For this purpose, install a dual thermostat (high limit thermostat and high limit safety cut-out).
4. Close off test nipples which are not used for the installation of a probe or sensor.

Domestic Water Connections



Note: - Connect all pipe work with detachable fittings.
- Seal connections that are not required with red brass caps.
- Equip the DHW circulation pipe with circulation pump, check valve and time switch. Gravity operation is only feasible to a limited degree.
- Always install DHW group of tanks with connected DHW circulation.

1. Pipe together boiler and tank as illustrated. Connections must be accessible for service (use factory supplied adaptors).
2. Insulate domestic hot water supply piping.

IMPORTANT

This is a simplified conceptual drawing only! Piping and necessary componentry must be field verified. Proper installation and functionality in the field are the responsibility of the heating contractor.

Legend

Ⓐ	Spring-loaded flow check valve
Ⓑ	Discharge pipe
Ⓒ	Anti-scald tempering valve (field supplied)
SV	Shut-off valve
FV	Flow check valve
PR	Pressure reducing valve
D	Drain
DCW	Cold water supply lines
PGC	Pressure gage connection
E	Precharged expansion tank (required where backflow preventer is installed; check local plumbing codes and requirements)
BP1	Backflow preventer
BP2	Backflow preventer
T&P	Temperature and pressure relief valve
DW	Water filter
DHW	Domestic hot water supply
RP	Recirculation pipe
RPU	Recirculation pump

IMPORTANT

Use a Loctite 55 string and pipe dope on all threaded nipples on tank.

Domestic Water Connections *(continued)*

Always ensure the use of type approved devices.
Safety devices include the following components:

- Isolation valves
- Drain valve
- Pressure reducing valve
  where required by local jurisdiction
- Drinking water filter
  where required by local jurisdiction
- Backflow preventer
  Where backflow preventers are required, a domestic water expansion tank installation is required in the cold water inlet piping before the cold water enters the tank. The backflow device must be installed according to the manufacturer's installation instructions. Observe local codes and regulations.
- Tempering valve
  A tempering valve must be field installed where storage tank (domestic hot water temperature) exceeds local restricted temperatures or 140° F (60° C). Check code requirements.

IMPORTANT

In situations where a booster pump is used to maintain DHW pressure, Viessmann strongly recommends the installation of an oversized large expansion tank to ensure longer, less frequent pump cycles with less severe pressure gradients. If possible, use flexible piping before and after booster pump to isolate system piping from vibration and shocks.

- Temperature and pressure relief valve

  A temperature and pressure relief valve (T&P valve) is supplied with the tank. The heating contractor must install the valve on each tank in a method meeting code requirements.

  If local codes require a different relief valve, consult Viessmann Manufacturing for a substitute valve. The tank is approved for 150 psig. Maximum operating pressure is 150 psig.

  The T&P valve supplied with the tank is tested under ANSI Z21.22 Code for Relief Valves and Automatic Gas Shut-off Devices for Hot Water Supply Systems.

Watts Model 40XL-8	**150 psig**
ASME pressure steam rating	1438 MBH
CSA temperature steam rating	205 MBH
Relief temperature	210° F (99° C)
Inlet thread	¾" male
Outlet thread	¾" female

The valve supplied with the tank is manufactured by Watts Industries (Model 40XL-8) set to 100 psig for Canadian installations and set to 150 psig for US installations (where applicable). The valve is ASME pressure steam rated for 998 MBH and CSA temperature steam rated for 200 MBH. It is tested under ANSI Z21.22 code for Relief Valves and Automatic Gas Shut-off Devices for Hot Water Supply Systems. The relief temperature is set at 210° F (99° C). The valve has a male threaded inlet and female threaded outlet, both ¾ in. sizes.

Proper installation of the T&P valve shall include all of the following:

- The T&P valve shall be installed in the pipe connection point marked TPV in the tank instruction manual.
- The discharge line from the T&P valve shall be ¾ in. (1.9 cm) ∅ and run to a safe place of discharge approximately 1 ft. (30 cm) above the floor, close to a floor drain.
- The discharge line must be as short as possible and pitch downward from the T&P valve and terminate plain.

⚠ WARNING

The discharge line for the T&P valve must be oriented to prevent scalding of attendants.

- Do not route discharge line to the outdoors.
- Do not install any type of valve or an obstruction of any kind between the tank and the T&P valve, or between the T&P valve and the discharge line outlet.

⚠ WARNING

The valve test lever must be operated at least once per year by the owner to ensure that waterways are clear. A licensed professional heating contractor shall reinspect the T&P valve at least once every three years. Failure to inspect can result in unsafe temperature or pressure build-up, which can result in death, serious injury or substantial product/property damage.

Recirculation Connections

Pipe domestic hot water supply piping with tank as illustrated. Connections must be accessible for service (use factory supplied adaptors).

Install recirculation pump, flow check valve and recirculation timer (for shut-down during off-hours where feasible) on the recirculation piping side.

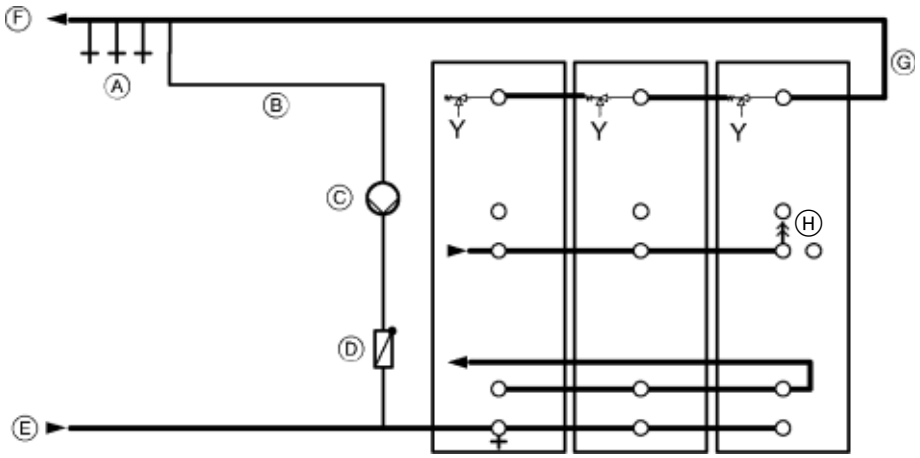
Gravity circulation of the recirculation system is restricted due to the upward-curved domestic hot water discharge piping inside the tank.

Connect tanks to existing recirculation piping. Cap off unused recirculation connections of individual tanks.

Saving Energy

A timer on the recirculation pump reduces the heat loss significantly in commercial applications during times when no or reduced demand for domestic hot water occurs.

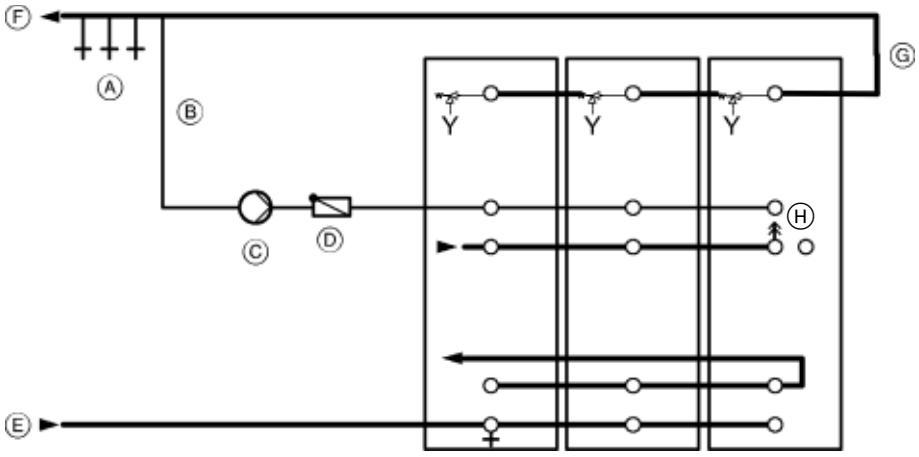
Connection of a recirculation system in a multiple tank installation for systems utilizing boilers or remote heating plants without low temperature boiler return water



Legend

Ⓐ Drawpoints
Ⓑ Recirculation piping
Ⓒ Circulation pump
Ⓓ Spring-loaded flow check valve
Ⓔ Domestic cold water supply
Ⓕ Domestic hot water supply
Ⓖ Secondary high limit aquastat location
Ⓗ Air vent

Connection of a recirculation system in a multiple tank installation for remote heating plants with low temperature boiler return water limit and/or for multiple recirculation lines



Legend

Ⓐ Drawpoints
Ⓑ Recirculation piping
Ⓒ Circulation pump
Ⓓ Spring-loaded flow check valve
Ⓔ Domestic cold water supply
Ⓕ Domestic hot water supply
Ⓖ Secondary high limit aquastat location
Ⓗ Air vent

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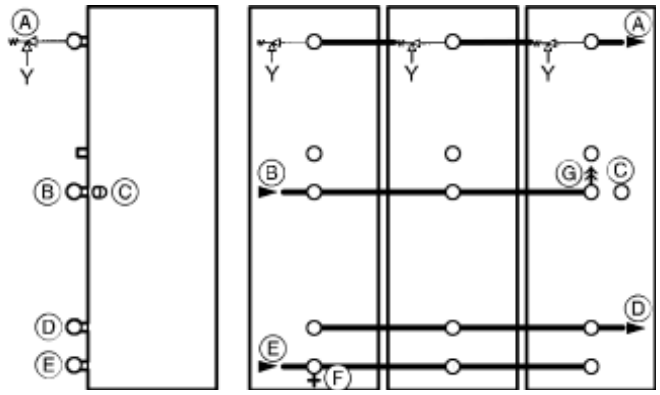
Multiple Tank Set-up [only for 79 and 120 USG (300 and 450 L) capacities]

Two tanks, each with 79 USG (300 L) content, or up to four tanks, each with 120 USG (450 L) content, may be installed side-by-side.

The tanks are controlled via one DHW tank aquastat. Individual control of tanks within the group of tanks is therefore not possible.

If control of individual tanks within a group of tanks is necessary, two alternatives exist. Either a 4-tank group can be separated into smaller groups, i.e. two batteries each consisting of two tanks (one DHW tank aquastat controls each group), or all tanks should be installed individually, i.e. individual tank set-up (one DHW tank aquastat controls each tank).



1. Install aquastat in the boiler water supply of the last tank receiving the boiler water in a group of tanks (see illustration).
2. Install domestic cold and hot water header lines (see illustration).
3. Install boiler water supply and return header lines (see illustration).
4. Make final cold and hot water connections.

IMPORTANT

Both the boiler supply/return header and the domestic hot/cold water header must be installed in a reverse return method. This ensures uniform heating of all tanks in the group. Header sizes for batteries up to four 79 to 120 USG (300 to 450 L) tanks are listed below.

5. Insulate header piping lines.

CAUTION

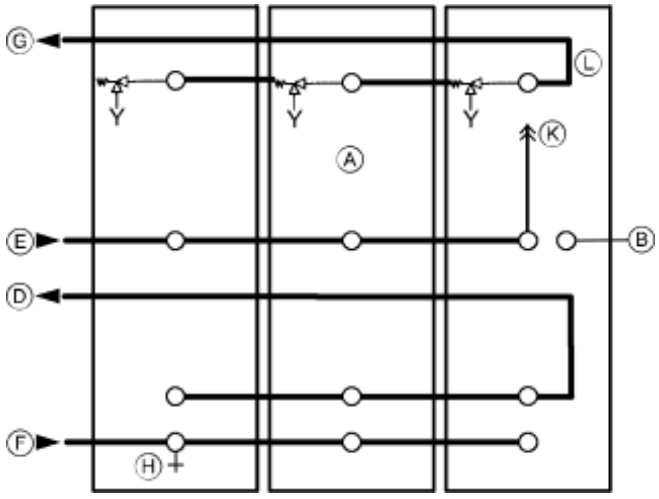
In commercial installations, we recommend the installation of an additional high limit aquastat in the main discharge pipe of domestic hot water from a group of tanks into the system, and to wire this additional high limit aquastat in series with the operating aquastat.

Legend

Ⓐ Domestic hot water supply and T&P valve connection
Ⓑ Boiler water supply
Ⓒ Operating aquastat
Ⓓ Boiler water return
Ⓔ Domestic cold water
Ⓕ Drain
Ⓖ Air vent

Storage capacity / tank	USG (L)	79 (300)	120 (450)		
Number of tanks		2	2	3	4
Layout					
Connections (individual tank)					
Heating water supply/return (common header size)	∅	2	2	2	2½
Domestic cold/hot water (common header size)	∅	1¼	1¼	1½	2
Recirculation tapping	∅	1	1	1	1

Multiple Tank Set-up [only for 79 and 120 USG (300 and 450 L) capacities] *(continued)*



Recommended piping of multiple tanks

Legend

Ⓐ Group of DHW tanks
Ⓑ Sensor/Operating aquastat well
Ⓓ Boiler water return
Ⓔ Boiler water supply
Ⓕ Domestic cold water supply
Ⓖ Domestic hot water
Ⓗ Drain
Ⓚ Air vent
Ⓛ Secondary high limit aquastat location

IMPORTANT

Use Loctite 55 pipe sealing cord and pipe dope on all threaded stainless steel nipples on tank.

All piping reverse return or use balancing valves.

1. Pipe together boiler and tanks as illustrated. Connections must be accessible for service (use factory supplied adaptors).
2. For boiler water supply temperatures over 203° F (95° C): Remove plastic supply and return grommets (grommets are left-threaded).
3. Pipe supply line with an incline and install an automatic air vent at the highest point.
4. Install boiler sensor in sensor well (see pages 8 and 10).
5. Insulate piping.

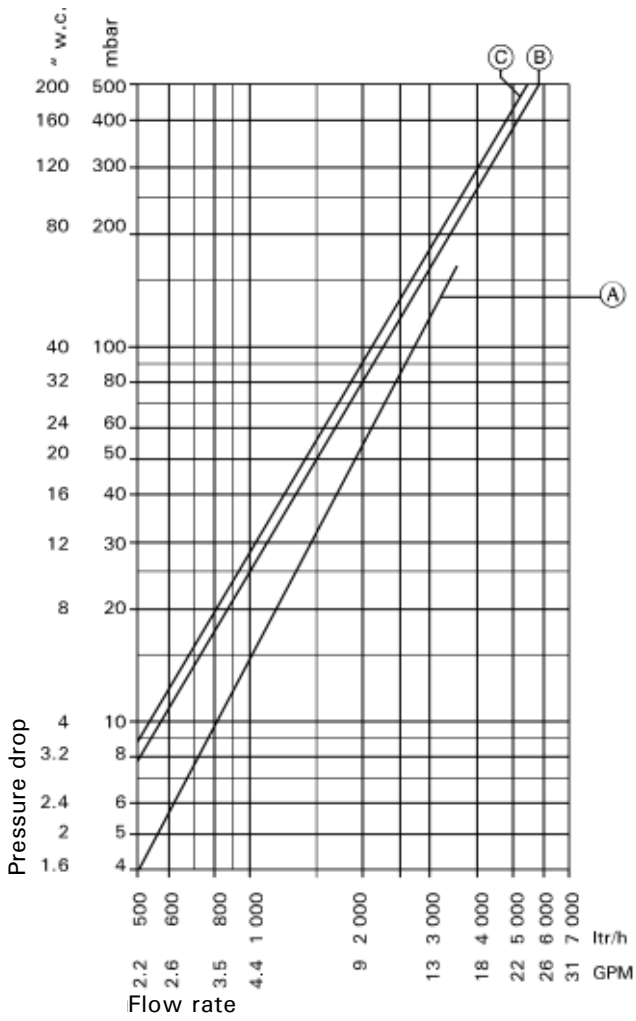
IMPORTANT

The circulation pump is activated by the operating aquastat or by the control system installed. The operating aquastat should be mounted on the tank which receives the boiler water supply last.

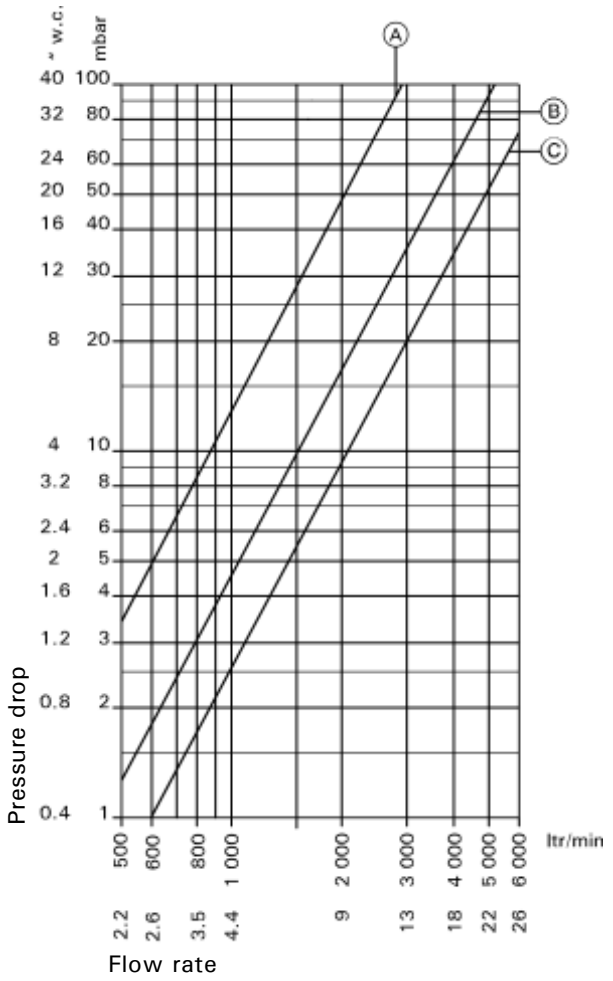
Viessmann recommends the installation of an additional high limit aquastat in the main discharge pipe of the DHW system. This aquastat should be wired in series with the operating aquastat and should be set approximately 9° F (5° C) higher than the operating aquastat.

Pressure Drop Information

Pressure drop on domestic hot water side (secondary circuit)



Pressure drop on heating water side (primary circuit)

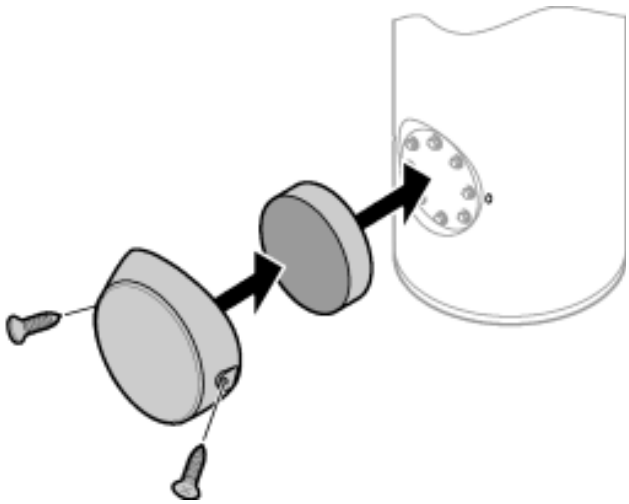


Legend

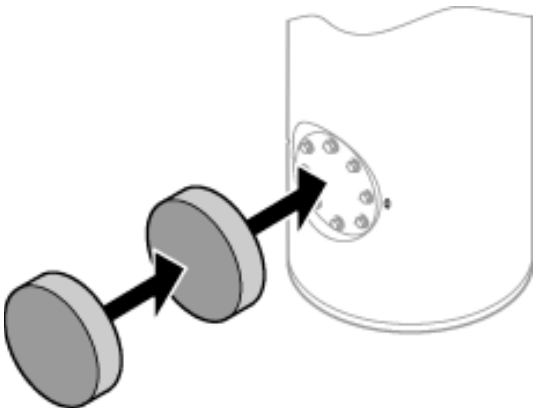
Ⓐ 42 USG (160 L) and 53 USG (200 L) storage capacity
Ⓑ 79 USG (300 L) storage capacities
Ⓒ 120 USG (450 L) storage capacity

Inspection Opening

Inspection opening for 79 USG (300 L) tank



Inspection opening for 120 USG (450 L) tank



Post Installation

Service binder

1. File all Parts Lists, Operating and Service Instructions in the Service Binder.
2. Install a protective hanging case near the boiler and store the Service Binder in this location.

For a listing of applicable Viessmann literature, please see Important Regulatory and Installation Requirements on page 4.

Start-up information

DHW Tank Start-up/Service Instructions

Printed on environmentally friendly (recycled and recyclable) paper.

Technical information subject to change without notice.

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